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inches. The eggs are ovate in shape, clear white in ground color, with a wreath about the large end of each of rather bold spottings of chestnut, hazel and vinaceous-cinnamon. These markings are more distinct, and therefore more conspicuous, than in any eggs of *V. h. huttoni* I have ever seen, tho this may not necessarily be a subspecific trait. The eggs measure, in hundredths of an inch, .70x.53, .70x.53, and .69x.54.

I find no difficulties in the way of recognizing three forms of the Hutton vireo in California; namely: *Vireo huttoni huttoni* CASSIN, which is the form locally common west of the Sierras from Redlands (*fide* Bishop, *l. c.*) to the Siskiyou Mountains at the extreme northern border of the State (See ANDERSON and GRINNELL, Proc. Ac. Nat. Sc. Phila., Jan. 1903, page 12); *Vireo huttoni oberholseri* BISHOP, so far definitely determined only from Witch Creek and Escondido, San Diego County; and *Vireo mailliardorum* GRINNELL, from Santa Cruz Island (CONDOR V, November 1903, page 157).

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Observations on the Notes and Ways of Two Western Vireos

BY ANNA HEAD

TO the readers of THE CONDOR who enjoyed Mr. Finley's beautifully illustrated article on the Cassin and the warbling vireos in the May, 1903, number, a few stray notes on points about the details of their domestic life may not be without interest.

My first nest of *Vireo gilvus swainsoni* was shown me by the father, whose pretty habit of singing constantly in the neighborhood of the nest, while doubtless encouraging to his patient wife, is really dangerous to the safety of the family. There was a tall pear tree just out of bloom, which shaded my cabin. Here I found the dainty structure, one of the prettiest nests I have ever seen, not excepting that of the Anna hummer. The bird had carefully matched the pale greenish white coloration of the under side of the young pear leaves, weaving into the very open fiber of the nest bits of lichen and the greenish hanging moss which thrives in the moist air of Mendocino County. It was very deep and narrow, almost like an oriole's, and hung from the twigs near the end of a branch about fifteen feet from the ground. When the female flew off, the male came and chased her on again with harsh scolding notes. They also have a very soft, confidential note that sounds like "prit-prit." When the female is sitting and hears the male approach, she gives a low but harsh sound like "ca-a-a-a." This is a good sign to find a nest by, but it cannot be heard unless one happens to be quite near. The male, when approaching, utters a rapid sputtering or pattering note, very different from his true song, which is a warble consisting of three accents, with short notes interspersed, and ending in a cheerful rising inflection.

I watched another nest which swung only about six feet up in an alder, and here I found that both male and female shared in the duties of incubation. The female would raise her head prettily and listen as the song of the male came nearer, but only slip off when he was ready to take her place. The bough swayed so that it seemed that the eggs would roll out; but I suppose the loose, elastic structure of the nest held them in.

The song of the Cassin vireo (*Vireo solitarius cassinii*) is far more striking, tho not so continuously uttered. It approaches more nearly to articulate human words than that of any bird I know. A series of emphatic phrases, each of from one to three syllables are uttered alternately with the rising or falling inflection, and separated by a distinct pause. If one had any hope of really guessing "the mind of the bright-eyed bird," it would not be hard to translate this song into human words. At least it seemed to me that once, when a round-eyed little fellow clad in gray came to offer his advice to a pair of agitated grosbeaks, who were distressed about my presence, he must have meant to use different words from when, in early spring, he was excitedly following a coy female from twig to twig, and pouring his passionate declaration into her unwilling ear.

I will venture to give a few of the phrases which he seemed to me to utter on this first occasion, as they may suggest the song to some one who is familiar with it, but does not know the little pale greenish bird from whose throat it comes. "Who are you?" he seemed to say to the intruder; "Watch out!" "Misery!" "Phew." This last monosyllable, in a low, rich voice, occurs at rather rare intervals, and seems to mean a great deal. Often another bird in the distance may be heard, answering between these phrases, and using the same series of inflections. The song carries a long way, and a dialogue like this, between two little householders on opposite sides of the canyon seems to give them great satisfaction.

Besides this note they have a soft warble, not often heard (meant only for the ear of one) and evidently expressive of extreme happiness, tho not so musical as the warble of *Vireo gilvus swainsoni*. By following this note I found on May 10, 1903, a partly finished nest in a small white oak, which has much the same drooping habit as the eastern elm, and so offers suitable nesting sites for this bird. While I watched, the female alone carried material and built, but the male showed no lack of interest. While his mate was away seeking material, he kept a sharp watch and drove away all unwelcome bird visitors. When she was seen rapidly approaching, he burst into a flood of song and flew with her to the nest, where he watched her labors with the greatest excitement.

The outer layer of the nest was complete and was composed of large tufts of white tissue paper, bits of white string and many silky spider's cocoons woven together with a little bark fiber. It was about ten feet up, and was larger in diameter and much shallower than that of the warbling vireo in the pear tree. The female brought fine bleached grasses and always went into the nest with them, to adjust them as lining. Then she would reach over the rim and draw out bits of spider silk, which she would wrap about the supporting twig and tuck down among the grasses. The female only uttered a scolding note which sounded like "zee—tsip, tsip, tsip," the first syllable given long and with emphasis, the last rapidly.

One morning there had been some excitement, and numbers of scolding birds of all kinds were heard, in the neighborhood, as I approached. It took half an hour for the female to quiet down enough to begin working, tho twice the male went to the nest tree and sang a sort of coaxing call. Finally when she came near he swelled out his breast and swayed from side to side, seeming to exert all his eloquence to reassure her, but she only scolded and flew away.

The male shares in incubation and even sings on the nest. At Lierley's, Mendocino County, these birds were very common, apparently more so than the warbling vireo, but the higher I went in the Sierras the less common in proportion the Cassin seemed to be. There was hardly a willow or alder thicket near Tahoe without the cheery song of the warbling vireo.

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